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A New Species of *Calliphora* from Ceram, Indonesia (Diptera: Calliphoridae)

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Calliphora mogii sp. nov. from Ceram, Indonesia, is described, with illustrations of male genitalia. A key to three species of *Calliphora* (Diptera: Calliphoridae) recorded from Indonesia is presented.
Key Words: *Calliphora mogii*, new species, key, Ceram, montane zone, larviparous.

Introduction

The blow fly fauna of Indonesia has been little investigated since Senior-White *et al.* (1940), but the species previously recorded were listed in catalogues of the Diptera (James 1977; Kurahashi 1989b). After the publication of the "Catalog of the Diptera of the Oriental Region", six calliphorid species were described from Celebes by Kurahashi and his colleagues (Kurahashi and Magpayo 1987; Kurahashi 1988, 1989a; Wells and Kurahashi 1996; Kurahashi and Selomo 1997). However, no species of *Calliphora* has been recorded from Ceram (Kurahashi 1989). In years past, it was very difficult for researchers to approach the higher mountains in Ceram. The higher altitudinal montane zones are considered to be habitats of *Calliphora* species under tropical climates (Kurahashi and Selomo 1997). *Calliphora fulviceps* van der Wulp, 1892 has been recorded from high mountains in the Malayan Peninsula, Sumatra, Java, Borneo, and the Philippines (Kurahashi 1971). Another species, *C. hasanuddini* Kurahashi and Selomo, 1997 was also found in the montane forests in Celebes.

In 1997 the authors investigated the fauna of synanthropic flies in Ceram. We fortunately had a chance to survey the higher altitudinal mountainous areas, and made a comprehensive collection of flies of medical importance. Examination of the collected material has revealed an undescribed species of *Calliphora*. This fly is similar to *Calliphora fulviceps*, and also to *C. papuensis* Kurahashi, 1971 from New Guinea, but differs from them in having yellow basicosta. The present new species belongs to the subgenus *Paracalliphora* Townsend, which is widely distributed in the Australasian and Oceanic regions and is invading a part of Oriental region such as Indonesia, Malaysia, and the Philippines. A description and illustrations of this new species are given hereinafter.

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Key to the Species of Indonesian *Calliphora*

1. Humeri reddish; thorax reddish in part; legs yellowish brown on coxae, apices of femora, and bases of tibiae; abdomen reddish on lateral sides. Celebes .... *C.* (*Paracalliphora*) *hasanuddini*
-. Humeri bluish black, metallic, concolorous with thoracic dorsum; thorax entirely bluish black; legs largely blackish; abdomen entirely metallic blue 2
2. Basicosta yellow. Ceram ..... *C.* (*Paracalliphora*) *mogii* sp. nov.
-. Basicosta black. Sumatra and Java ..... *C.* (*Paracalliphora*) *fulviceps*

Genus ***Calliphora*** Robineau-Desvoidy, 1830

Calliphora Robineau-Desvoidy, 1830: 433. Type species: *Musca vomitoria* Linnaeus, 1758, orig. des.

Subgenus ***Paracalliphora*** Townsend, 1916

Paracalliphora Townsend, 1916: 151 (as gen.). Type species: *Calliphora oceaniae* Robineau-Desvoidy, 1830 [*Musca augur* Fabricius, 1775], orig. des.

Calliphora (***Paracalliphora***) ***mogii*** sp. nov.
(Fig. 1)

Male. Head: eyes bare, holoptic, closely approximated but separated on frons by less than width of anterior ocellus; frons index 0.01-0.02; frontal stripe blackish, sometimes reddish brown anteriorly, widened anteriorly and posteriorly, reduced to fine line at narrowest point; parafrontalia grey-dusted, slightly yellowish-tinged along inner margin, darkened toward vertex, with fine, rather long, black setulae anteriorly, provided with about 12 pairs of *ori* and several fine interstitials and additionals; face dark brown to fuscous, slightly brownish-grey-dusted, without distinct median carina; parafacialia grey-dusted, slightly yellowish tinged along anterior and lower margins, reddish brown on lower 1/3, with rather long, fine, black setulae on upper 2/3; facialia brown, with black setulae on lower 2/3 from vibrissae to antennal bases; medianae and vibrissaria reddish brown, bare, a few black setulae present on lower part of medianae; vibrissae strongly developed; gena and postgena yellowish brown, slightly darkened anteriorly, sparsely yellowish-grey-dusted, gena clothed with black hairs except for golden ones along lower and posterior margins; postgena entirely clothed with golden hairs; occiput black, silver- to yellowish-grey-dusted, clothed with golden hairs except for row of postorbital bristles; epistome distinctly projecting forward, brown; third antennal segment largely blackish except for ventral surface of basal portion and joint of second and third segments reddish, nearly four times as long as second; second segment brown; arista black, pale on median portion, long-plumose; palpus yellowish brown.

Thorax: black, entirely covered with whitish grey dusting, with trace of fine, submedian, dark stripes anteriorly, and with triangular, lateral, dark spots; humerus,

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scutellum, and postalar callus concolorous with scutum; prosternum golden-haired; propleuron with yellowish brown hairs; mesopleuron covered with black hairs, tuft of golden crinkly hairs present below prostigmatal bristle; sternopleuron clothed with black hairs, sometimes intermixed with yellow ones posteriorly; hypopleuron clothed with black hairs, sometimes with yellow ones on lower part; hypopleural bristles black; pleurotergite with patch of crinkly black hairs; supraspiracular convexity pubescent, without setulose hairs; postalar declivity with tuft of black and yellow hairs on central portion; suprasquamal ridge with anterior parasquamal tuft of more than 10 fine, yellow hairs; tympanic tuft of black hairs present; mesothoracic spiracle large, yellowish orange, metathoracic one with anterior opaculum blackish. Chaetotaxy: *ac* 2+3; *dc* 2-3+3; *ia* 0-1+2; *h* 2-3; *ph* 3; *prs* 1; *sa* 3, +2 fine interstitials; *pa* 2-3; *st* 2-3+1; *sc* 3-4+1, sometimes +2 fine interstitials; *pp* 4; *pst* 1-3.

Wings: hyaline, slightly infuscated at base; veins blackish; epaulet reddish brown; basicosta yellow; subcostal sclerite yellowish brown, with fuscous brown pubescence; node of second and third longitudinal veins with several black setulae above and below; fourth longitudinal vein bent at a right angle, with corner rounded and section of fourth vein from bend to wing edge inflexed; squamae entirely blackish, thoracic one lobulated, almost entirely covered with fine, long, black hairs on upper surface; tufts of hairs on inner lower margin of alar squama black. Halteres fuscous brown.

Legs: black, partially reddish on coxae and apicoventral surfaces of femora; fore tibia with 1 *p* and 3-4 short *ad*; mid tibia with 1-2 *ad*, 0-1 *pd*, 2 *p*, and 1 *v*; hind tibia with 2-4 *ad*, 2-4 *pd*, and 2 *av*, rows of short *ad* and short *pd* also present.

Abdomen: short oval, entirely black with dark blue or purple tinge; tergite 5 slightly brownish-grey-dusted on disc; venter of tergites 2-5 and sternites 2-5 also more or less grey-dusted; ventral sides of tergite 1+2 usually clothed with black hairs, sometimes intermixed with several yellow ones; hairs on sternites black except for yellowish ones on sternite 1 and anterolateral edges of sternite 2; tergites 1+2 with several lateral marginal bristles; tergite 3 with row of decumbent marginals, several lateral marginal ones more or less developed; tergite 4 with complete row of erect marginals; tergite 5 with fine, long, erect bristles on disc and hind margin. Hypopygium normal in size, male genitalia as shown in Fig. 1.

Female. Head: eyes separated at vertex by 0.25-0.27 of head width; frontal stripe largely blackish, reddish brown anteriorly, parallel-sided and slightly narrowed anteriorly and posteriorly, nearly twice as wide as one of parafrontalia just in front of anterior ocellus; parafrontalia dull golden-dusted anteriorly, darkened toward vertex, rather densely setulose along entire length, provided with ca 8 pairs of *ori*; parafrontalia below anterior proclinate *ors*, sometimes with dark brown spot that shifts according to direction of incident light; upper half of parafacialia with brown spot anteriorly under certain lighting angle; *ors* 2+1; *oc* developed; *acoc* absent; *ov* and *iv* well developed; *poc* parallel; *occ* 1-3.

Legs: mid tibia with 1-2 *ad*, 2 *p*, 1 *pd*, and 1 *v*; hind tibia with 3 *ad*, 2-4 *pd*, and incomplete row of short *ad* and *pd*.

Abdomen: tergite 4 with row of decumbent marginal bristles; a few decumbent lateral marginals developed on tergites 1+2-3. Ovipositor of moderate length. Otherwise same as for male.

Length: 8.0-11.5 mm.

Holotype ♂, CERAM: Maluku-Tengah, Moso to Manusela, 1,500-1,700 m, forest,

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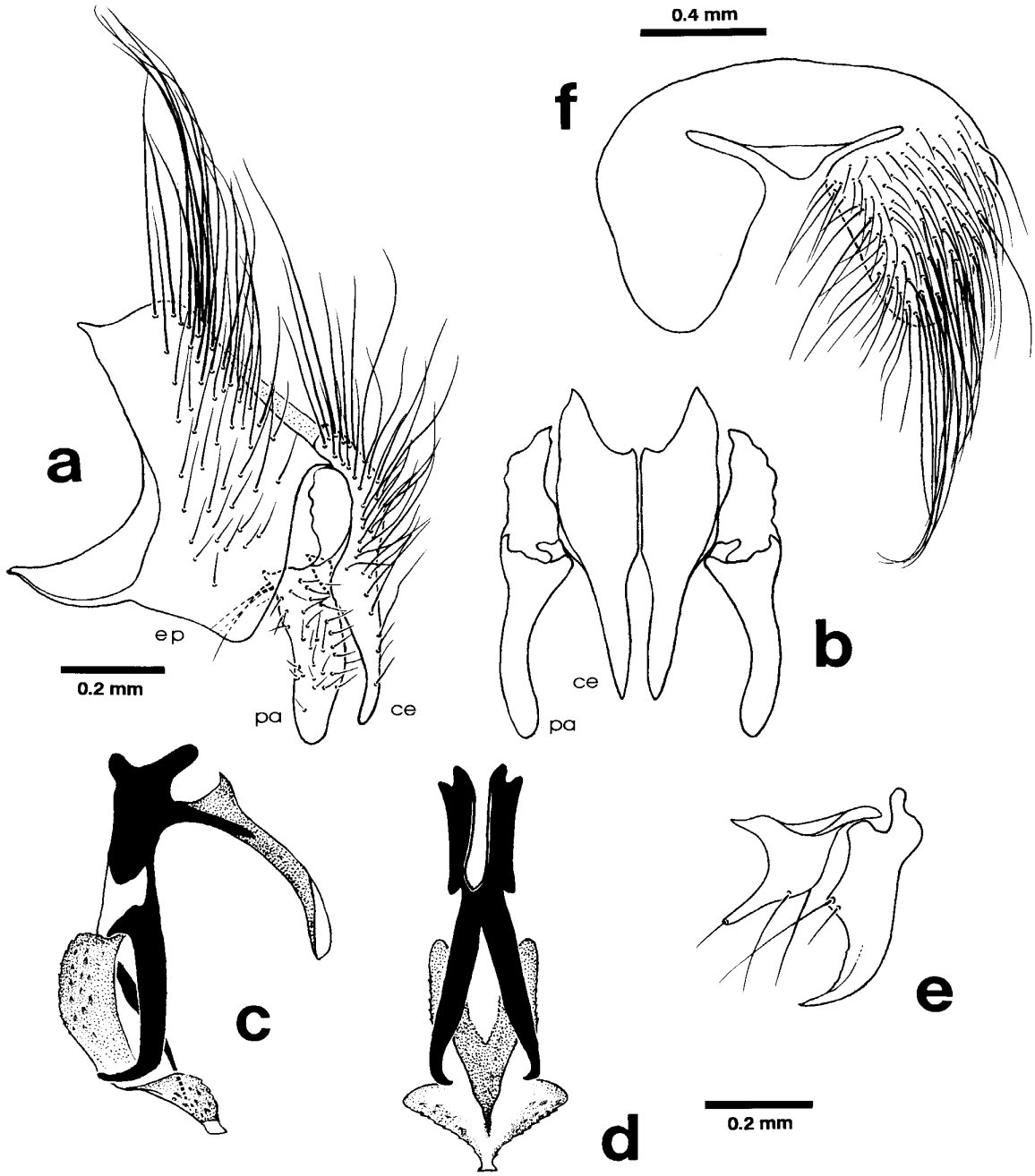

Fig. 1. *Calliphora mogii* sp. nov., male genitalia. a, epandrium (ep), cercus (ce), and paralobus (pa), lateral view; b, cerci and paralobi, caudal view; c, aedeagus, lateral view; d, aedeagus, posterior view; e, anterior and posterior parameres, lateral view; f, sternite 5, ventral view. a-e, same scale, 0.2mm.

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14-21.ix.1997, H. Kurahashi. Paratypes. CERAM: 2♂ 50♀, same data as holotype.

Type depository. The holotype (♂) and some paratypes (7♀) are deposited in the Museum Zoologicum Bogorense, Bogor. The other paratypes are deposited in the Reference Museum, Department of Medical Entomology, National Institute of Infectious Diseases, Tokyo (1♂, 22♀); National Science Museum, Tokyo (7♀); Natural History Museum, London (7♀) and Bishop Museum, Honolulu (1♂, 7♀).

Etymology. The specific name is dedicated to Dr. M. Mogi, the team leader of the expedition to Manusela.

Bionomics. Adults are attracted to decaying meat in montane forests higher than 1,500 m above sea level. Larviparous.

Distribution. Indonesia (Ceram).

Remarks. *Calliphora* (*Paracalliphora*) *mogii* sp. nov. superficially resembles *C.* (*Paracalliphora*) *fulviceps*, but is easily distinguished from it by the coloration of the basicosta given in the key. Male and female genital morphology shows that *C. mogii* sp. nov. belongs to the subgenus *Paracalliphora*. The larviparous habit is also characteristic of this subgenus.

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